NEW Lifetime Warranty

Commitment to Quality

For full coverage of your warranty, be sure to register your product using the enclosed registration card.

A Network Systems Solution
UNICOM™

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City of Industry, CA 91748 U.S.A.
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Rev: 05.03

Vigor series

A Network Systems Solution
UNICOM™

10/100Base-TX/FX Fast Ethernet Converter

FEP-5300TF-C (SC/MM/2km)
FEP-5300TF-T (ST/MM/2km)
FEP-5400TF-C (SC/SM/15km)
FEP-5401TF-C (SC/SM/30km)
FEP-5402TF-C (SC/SM/60km)

USER'S MANUAL

Package Contents

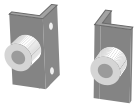
Package contents include the following:

- 10/100Base-TX to 100Base-FX Converter (Multi-Mode, Single Mode)
- DC Power Adapter
- User's Manual
- Rack Mount Brackets
- Warranty card (not shown)

10/100Base-TX/FX Converter
(Multi-Mode, Single Mode)

User's Manual

Power Adapter



Rack Mount Brackets

Figure 1. Contents of package.

IMPORTANT: If any piece is missing or damaged, please contact your local dealer or reseller for service.

For Your Records

Product Name: _____

_____

Serial Number: _____

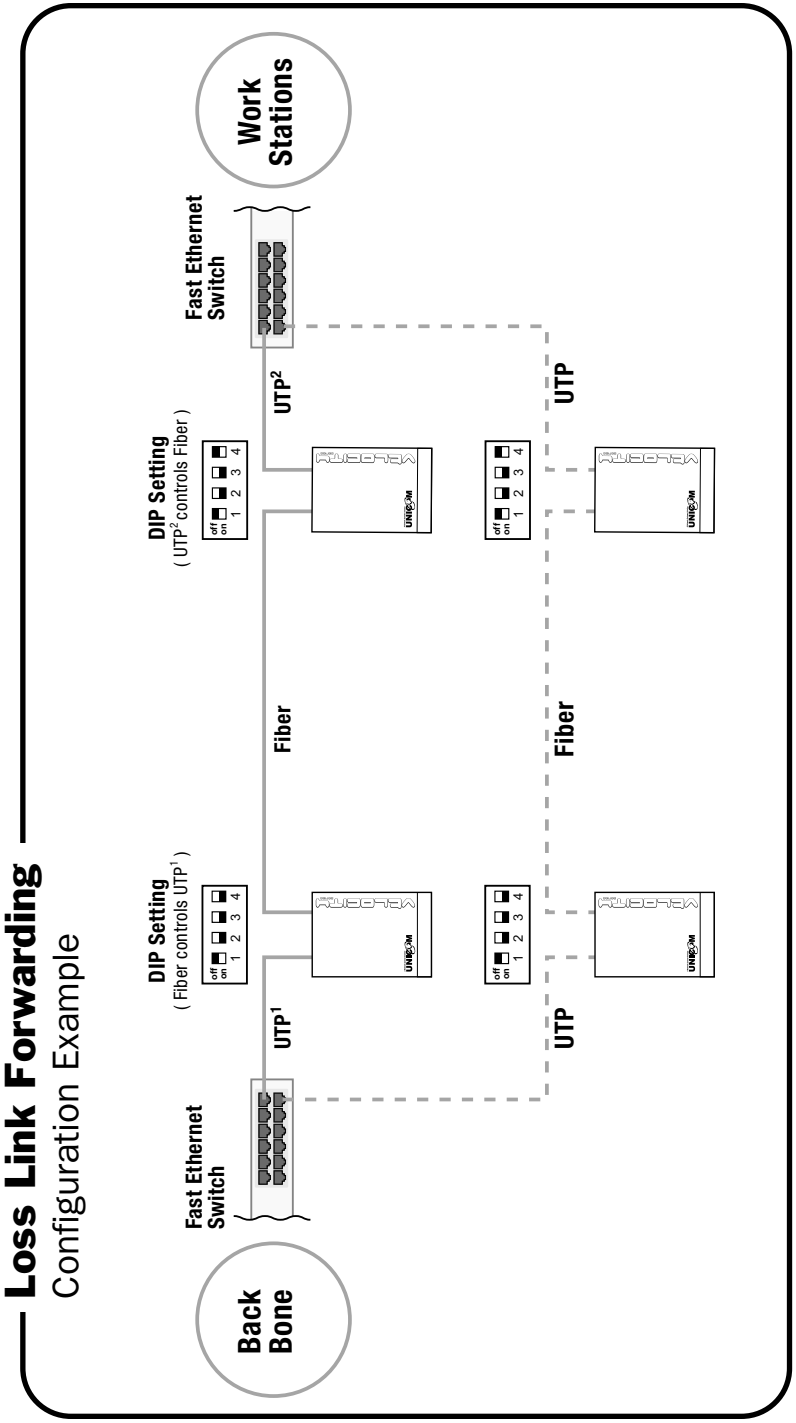
Date of Purchase: _____

Purchased from: _____

Notes: _____

_____

_____



Loss Link Forwarding
Configuration Example

Product Specifications

Standard Compliance:	*IEEE 802.3u 10Base-T/100Base-TX/100Base-FX Fast Ethernet Standards*
Interface:	*(1) 100Base-TX Shielded RJ-45 Jack* *(1) 100Base-FX Dual SC or ST connector*
Wavelength:	*1310nm.*
Link Distance:	*100 m Max., Category 5e/6 UTP/ScTP* *2 km Max., FEP-5300TF-T or FEP-5300TF-C* *15 km Max., FEP-5400TF-C* *30 km Max., FEP-5401TF-C* *60 km Max., FEP-5402TF-C*
DIP Switch:	*ON/OFF (x4) Loss Link Forwarding*
LED Indicators:	*Power, Link/Activity, Receive/Full-Duplex, 100*
Power Supply:	*External power adapter 5V DC / 2.5A*
Operating Temperature:	*0˚C to 55˚C*
Operating Humidity:	*10% - 80% RH*
EMI:	*FCC Class A, CE Mark*
Enclosure:	*Metal*
Dimensions:	*4.72"(L) x 3.36"(W) x .96"(H)* *118mm x 84mm x 24mm*
Warranty:	*Limited Lifetime*

FCC Statement

This equipment has been tested and found to comply with the limits for a class B device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with instructions, may cause harmful interference with radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case, the user will be required to correct the interference at the user's expense.

Introduction

Congratulations on purchasing a quality UNICOM product.

Unicom's *VELOCITY Series* represents the newest, most advanced generation of signal conversion technology.

This converter is designed to expand your network through a fiber optic connection extending a fiber link up to 60 km (Single mode in full duplex mode).

The 10/100TX/100FX Converters offer the most popular fiber cabling connectors: SC and ST formats in Multi-mode and SC in Single Mode. The UTP port supports the Auto MDI/MDIX function and there are 4 DIP switches to set the operation mode for the UTP, Fiber ports and Link Loss Forwarding function. These converters can be used in Unicom's 10 bay media chassis or as stand-alone components.

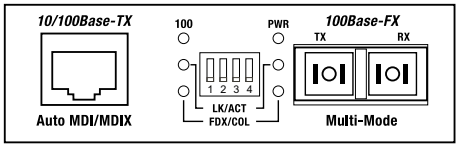
Key Features

- Complies with IEEE 802.3, 802.3u, 802.3x standards.
- Converts between UTP cabling and Fiber Optic cabling.
- One RJ-45 connector, Auto-MDI/MDIX for UTP port.
- Supports 10/100 Mbps Auto-negotiation for UTP port.
- Fiber cabling connectivity up to 60Km.
- Uses store-and-forward switching to separate collision domains.
- One fiber connector (SC/Single Mode, SC or ST/Multi-Mode) for 100Base-FX.
- Prevents packet loss by supporting back-pressure & flow control.
- Four DIP-switches for operation mode setup and Link-Loss Forwarding function.
- Per port LEDs for diagnosis and maintenance
- External DC power adapter, 5V/2.5A
- Can be mounted in chassis or used as stand-alone.
- FCC Class A, CE Mark certification

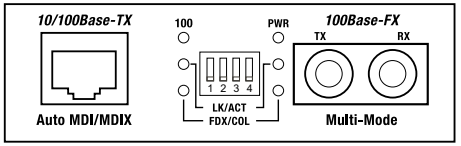
Hardware Description

The Front Panel

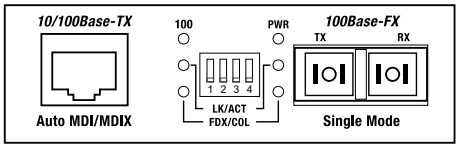
The Front Panel of the 10/100TX/100FX converters consists of one RJ-45 Port (Auto MDI/MDIX), 6 LED Indicators (TX SPD, LK/ACT, FDX/COL, Fiber LK/ACT, FDX and PWR) and one fiber 100Base-FX Port.



FEP-5300TF-C 2km



FEP-5300TF-T 2km



FEP-5400TF-C 15km
FEP-5401TF-C 30km
FEP-5402TF-C 60km

Ports

- RJ-45 Port (Auto MDI/MDIX): the Ethernet RJ-45 will features Auto-Sensing for 10Base-T or 100Base-TX connections and Auto MDI/MDIX which is basically an auto crossover feature. This means you can connect to another Switch or workstation without changing to a crossover cable.
- Fiber Port: This port is for the 100 Base-FX connection. Unicom provides three different styles of fiber connectors (SC/ST, Multi-Mode or SC, Single-mode).

Troubleshooting

- Verify that you are using the right power adapter (DC 5V, 2.5 A). Using a power adapter with DC output greater than 5V could result in damage to the unit and/or personal injury.
- Check the configuration DIP switch. It must be set in the same operation mode as its link partner.
- Confirm the proper UTP/Fiber cable is being used. The Single Mode converter must use Single Mode fiber optic cable.

Optical Fiber Spec

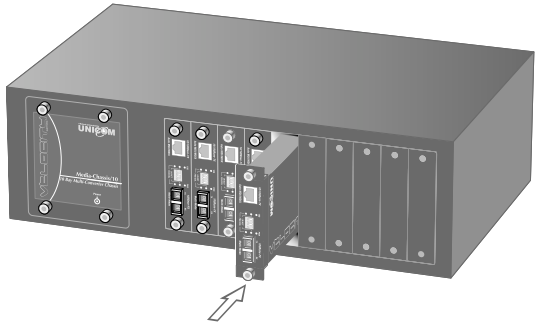
The following table shows the optical fiber specification:

Module Name	Wavelength (nm)	Avg. Launch Power (dB)	Avg. Sensitivity (dB)
FEP-5300TF-C	1310 nm	-19 dB	-31 dB
FEP-5300TF-T	1310 nm	-19 dB	-31 dB
FEP-5400TF-C (15km)	1310 nm	-20 dB	-31 dB
FEP-5401TF-C (30km)	1310 nm	-15 dB	-34 dB
FEP-5402TF-C (60km)	1310 nm	-5 dB	-34 dB

Module Name	Avg. Power Loss Budget (dBm)	Max. FDX Fiber Distance (Km)	Fiber Size (μm)
FEP-5300TF-C	12 dBm	2 Km	62.5/125 50/125
FEP-5300TF-T	12 dBm	2 Km	62.5/125 50/125
FEP-5400TF-C	11 dBm	15 Km	9/125, 8/125
FEP-5401TF-C	19 dBm	30 Km	9/125, 8/125
FEP-5402TF-C	29 dBm	60 Km	9/125, 8/125

C. Use a screwdriver to attach the rack mount ears to both sides of the modular converter.

D. Install the modular converter by inserting it into the chassis guides and sliding it in until it stops. Press it firmly to seat the chassis power plug into the modular converter receptacle.



E. Gently push the thumbscrews in and turn clockwise to tighten. *Do not over tighten.*

Cabling

- Twisted-pair segments can be Unshielded Twisted Pair (UTP) or Shielded Twisted Pair (STP) cabling. The cable must comply with the IEEE 802.3u 100Base-TX standard for Category 5e. The cable between the converter and the link partner (switch, hub, workstation, etc.) must be 100 meters (328 ft.) or less in length.
- Fiber segments using Single Mode connectors must use 8/125 or 9/125 µm Single Mode fiber cable. The maximum link distance is 15, 30, or 60 Kilometers (depending on model) in full duplex operation. For half-duplex operation, the recommended maximum distance is 412 meters (1352 ft.).
- Fiber segments using Multi-Mode connectors must use 50 or 62.5/125 µm Multi-Mode fiber cable. The maximum link distance is 2 Kilometers (6562 ft.).

LED Indicators

There are six diagnostic LEDs located on the Front panel of these Converters. The LEDs provide real-time information on system status. The indicators include Power, UTP 100, LK/ACT, FDX/COL, Fiber LK/ACT, and FDX/COL. The following table provides descriptions of the LEDs.

LED	Status	Color	Description
PWR	On	Green	• The converter is supplied with suitable power.
100	On	Green	• Current UTP Speed
LK/ACT (UTP)	On Blinking Off	Green - -	• Unit is connected with a link • Unit is transmitting data • No device attached
LK/ACT (Fiber)	On Blinking Off	Green - -	• Unit is connected with a link • Unit is transmitting data • No device attached
FDX/COL (UTP)	On Blinking Off	Orange - -	• The UTP port is in full-duplex mode. • Packet Collisions occurring in the port. • Half-duplex mode/no device attached
FDX/COL (Fiber)	On Blinking Off	Orange - -	• The fiber port is in full-duplex mode. • Packet Collisions occurring in the port. • Half-duplex mode/no device attached

DIP Switch

The DIP-switches are used to configure operation mode for LLF (Link Loss Forwarding) and operation modes for the UTP/Fiber ports.

DIP-switch setup is as follows:

No.	Status	Description
1	OFF	UTP Port Auto Negotiation Enable
	ON	UTP Port Force 10M Full Duplex
2	OFF	Fiber Port Force 100M Half Duplex
	ON	Fiber Port Force 100M Full Duplex
3	OFF	LLF Function Disable
	ON	LLF Function Enable
4	OFF	UTP Port Control Fiber Port
	ON	Fiber Port Control UTP Port

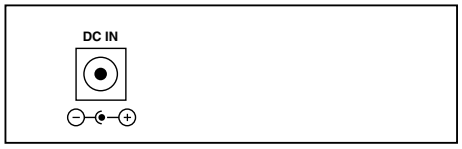
Note: *To activate DIP switch 4, DIP 3 must be enabled.*

Link Loss Forwarding: The Link Loss Forwarding feature sends fiber or UTP link failure information to the switches. Any failure along the signal link is passed to and can be seen by an attached device. This feature is used for easy network diagnosis and supports switches utilizing Spanning Tree Protocol.

Note: Do not change the DIP-switch setting while the UTP or fiber ports are transmitting or receiving data as data error may occur.

Rear Panel

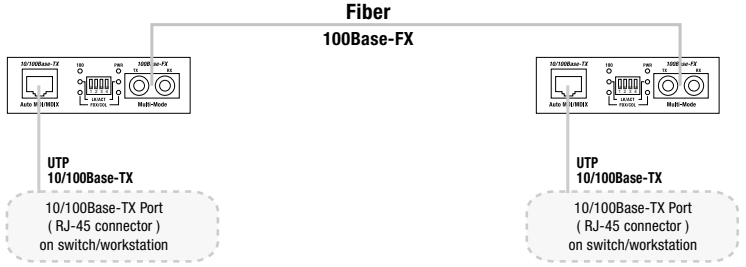
The rear panel contains a power socket. This power socket accepts DC 5V voltage and minimum 2.5A supplied current.



Network Connection

A. Select the appropriate length Category 5e or 6 twisted pair cable. Connect one end of the twisted pair cable to the RJ-45 connector on the converter and the other end of twisted pair cable to the RJ-45 connector on any 10/100 Base-TX device.

B. Connect one end of a fiber jumper to the SC connector on this converter and the other end of the fiber jumper to the SC connector on the other 100 Base-FX device.



C. Attach the power adapter DC jack to the converter. Verify that the Power LED is on.

D. Verify that the UTP “LK/ACT” LEDs light when cable connection is installed correctly. Verify that Fiber “LK/ACT” LED blinks to indicate network activity.

Installing Converters into Chassis

Follow the steps below to install modular converters into the 10 space Converter Chassis (pn: FEP-593110).

A. Remove the blank bracket from the chassis by rotating thumbscrew counterclockwise. Put the blank bracket aside.

B. Open the rack mount bracket kit. The kit contains two rack mount brackets and four screws.